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	Application Number	09/926,807	
	Filing Date	December 21, 2001	
	First Named Inventor	Jacobus Johannes M. MEYER et al.	
	Group Art Unit	1614	
	Examiner Name	K. Weddington	
Total Number of Pages in This Submission		Attorney Docket Number	742439-3

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>		Application Number	09/926,807		
		Filing Date	December 21, 2001		
		First Named Inventor	Jacobus Johannes M. MEYER et al		
		Group Art Unit	1614		
		Examiner Name	K. Weddington0742349-3		
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		EVANS et al., Plumbagin from Diospyros olen, MDPI, April 16, 2004, Molecules 1999, 4, M93	

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Molecules **1999**, *4*, M93

Plumbagin from *Diospyros olen*

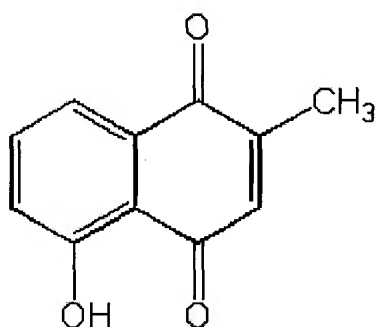
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Plumbagin (5-hydroxy-2-methyl-1,4-naphthoquinone) (CAS Reg. No. 481-42-5) was isolated from the bark of *Diospyros olen* (Ebenaceae) via an antibiotic guided biological assay using the bacterium *Pseudomonas solanacearum*. *D. olen* bark, collected in New Caledonia, was extracted with dichloromethane and components separated by flash chromatography on silica. Plumbagin eluted with 30% diethyl ether in hexane. Further purification by preparative silica TLC developed with dichloromethane and by sublimation gave orange crystals. Plumbagin is a natural product of higher plants, previously found in the family Ebenaceae [1,2]. This is the first report of the occurrence of plumbagin in *D. olen*. [3].

M.p. 72-73°. Reported 78-79°

MS (m/z, 70eV): 188 (100%), 173 (25), 160 (23), 131 (38), 120 (20), 92 (21), 63 (18).

¹H-NMR (CDCl₃): 2.20 (s, 3H), 6.81 (d, 1H), 7.25 (m, 1H), 7.62 (m, 2H), 11.95 (s, 1H).

Acknowledgment: The National Science Foundation Grant BIR 9419402, National Geographic Society Grant #5426-95.

References and Notes

1. Robinson, T. *Organic Constituents of Higher Plants*, 6th ed., Cordus Press, North Amherst, MA. 1991.
2. *Dictionary of Natural Products* v.3, p.3105. Chapman and Hall, London, 1994.
3. We reported in this short note the isolation and identification of plumbagin from a plant indigenous to New Caledonia. Although identified previously from the plant "plumbago" this is the first time it has been found in *Diospyros olen*. New Caledonia was part of the ancient megacontinent "Gondwanaland" which split into parts of present day Antarctica, Chile, New Zealand, New Caledonia, Australia, New

Guinea and other small isolated islands. While the original plant source of this compound, plumbago, is indigenous to the old world it is still retained in related plants after a possible 350 million years. It is estimated that New Caledonia has been separated from Gondwanaland for about 260 million years and allowing for the separation of the new and old worlds of an additional 100 million years yet this same chemistry is conserved as a very potent antibiotic which doubtless protects plants from numerous pathogens.

Sample Availability: Aldrich Chemical Co.

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